

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for end-to-end environmental data acquisition and delivery comprising the steps of:

- a) acquiring a first set of environmental subsurface data in a first location via direct reading sensors;
- b) geo-referencing said data;
- c) transmitting said data to a data analysis application server; ~~and~~
- d) analyzing said data to obtain information about said data; and
- e) using said information to select a next location.

2. (original) The method of claim 1, wherein said data of step (a) comprises:
one or more data parameters.

3. (currently amended) The method of claim 1, wherein said environmental subsurface data relates to at least one of chemical ~~and~~ or geological attributes of the subsurface.

4. (currently amended) The method of claim 1, wherein said direct reading sensors of step (a) comprise at least one of:

- direct sensing technologies;
- optical sensors;
- chemical sensors;
- electromechanical sensors;
- membrane interface probe (MIP) sensors;
- advanced MIP sensors;

laser induced fluorescence (LIF) sensors;
ultraviolet induced fluorescence (UVF) sensors;
polymer sensors; ~~and~~ or
haloprobe sensors.

5. (currently amended) The method of claim 1, wherein said geo-referencing of said step (b) comprises at least one of:

geo-referencing in at least two dimensions; ~~and~~ or
geo-referencing said data to a specific point on the earth's surface.

6. (currently amended) The method of claim 5, wherein said at least two dimensions comprise at least one of:

latitude, longitude, altitude, ~~and~~ or time.

7. (original) The method of claim 1, wherein said geo-referencing of said step (b) comprises:
geo-referencing in at least three dimensions.

8. (currently amended) The method of claim 7, wherein said at least three dimensions comprise at least one of: latitude, longitude, altitude, ~~and~~ or time.

9. (currently amended) The method of claim 1, wherein said transmitting of step (c) comprises at least one of:

transmitting via a communications link;
transmitting via the Internet; ~~and~~ or
transmitting via a wireless communications link.

10. (original) The method of claim 1, wherein said application server of step (c) comprises:
an application service provider (ASP).
11. (currently amended) The method of claim 1, wherein said step (d) comprises at least one of:
storing said data in a database;
mining said data;
calculating said information from said data using an algorithm;
performing visualization processing in at least two dimensions; displaying a
graphical visualization of said data;
mapping said data; ~~and~~ or
displaying in at least one of: two-dimensional and three-dimensional formats
said data.
12. (currently amended) The method of claim 1, wherein said step (d) comprises at least one of:
refining raw data into processed data;
normalizing said data for variations in acquisition of said data;
normalizing for condition of a membrane of a membrane interface probe
(MIP);
normalizing for variation of actual subsurface conditions including at least
one of chemical concentration and soil water matrix;
determining relative quality efficacy data including determining at least one
of: pressure, flow rate, condition of detectors, drift, calibration, depth of probe,
hydrostatic, and baseline noise of analytical/electrical system;
storing said data;

aggregating said data into aggregate data;
determining predictive modeling using said aggregate data;
assessing measure of risk using said aggregate data;
evaluating risk using said aggregate data;
calculating total mass of chemical compounds;
calculating volume of affected soil and groundwater;
calculating compound identification,
calculating removal costs,
performing sensitivity analysis, ~~and~~ or
comparing data of multiple sites.

13. (currently amended) The method of claim 12, wherein said step of performing a sensitivity analysis comprises at least one of:

displaying using a “dashboard” type display; ~~and~~ or
providing results to at least one of an office device, and a field device.

14. (currently amended) The method of claim 1, further comprising:

~~e)f)~~ posting said information ~~on a web site~~ for access by authorized users.

15. (currently amended) The method of claim 14, wherein said ~~web site~~ posting comprises at least one of:

posting on a website; or
posting on a secure Internet Web site.

16. (currently amended) The method of claim 1, further comprising:

~~e)f)~~transmitting said information over a network to a ~~mobile~~_device.

17. (currently amended) The method of claim 16, wherein said network comprises at least one of:

a wired network; or

a wireless network.

18. (currently amended) The method of claim 1, further comprising at least one of:

~~e)f)~~aggregating said data into a database;

~~f)g)~~ mining said database;

~~g)h)~~ determining predictive modeling using said aggregate data;

~~h)i)~~ assessing measure of risk using said aggregate data;

~~i)j)~~ evaluating risk using said aggregate data;

~~k)~~ ~~j)~~ providing the user with relative analysis of various sites based on at least one of: geological information, and contaminant conditions; and

~~k)l)~~ storing said data in a database;

~~l)m)~~ grooming data;

~~m)n)~~ comparing data to at least one of: historical data, and data from other sites;

~~n)o)~~ performing datamining; ~~and or~~

~~o)p)~~ ranking sites.

19. (currently amended) The method of claim 1, further comprising:

~~d)f)~~ transmitting said information comprising:

- i. transmitting said information including completed data analytics via the Internet back to source location for decision-making and process changes; and
- ii. transmitting said information wirelessly to a mobile device to facilitate access via Internet protocols to said information analyzed from said sensor outputs.

20. (currently amended) The method of claim 1, further comprising at least one of:

~~g)e)~~ normalizing said data for variations in at least one of: acquisition of said data, condition of membrane of a membrane interface probe (MIP), subsurface conditions including at least one of chemical concentration ~~and~~ or soil water matrix; ~~and~~ or

~~g)f)~~ determining relative quality efficacy data including determining at least one of: pressure, flow rate, condition of detectors, drift, calibration, depth of probe, hydrostatic, ~~and~~ or baseline noise of analytical/electrical system.

21. (new) A method for end-to-end environmental data acquisition and delivery comprising the steps of:

- a) acquiring environmental subsurface data at a location via direct reading sensors;
- b) geo-referencing said data, wherein said geo-referencing comprises associating said environmental subsurface data with said location; and
- c) transmitting said data to a data analysis application server adapted to analyze said data to obtain information about said data.

22. (New) The method of claim 21, further comprising:

receiving said information from said data analysis application server.

23. (New) A method for environmental subsurface data acquisition and analysis comprising:

receiving environmental subsurface data acquired at a location via direct reading sensors;

receiving said location;

georeferencing said data by said location; and

analyzing said data to obtain information.